



[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2011-1325; Directorate Identifier 2010-NM-250-AD; Amendment 39-17014; AD 2012-07-08]**

**RIN 2120-AA64**

**Airworthiness Directives;** Empresa Brasileira de Aeronautica S.A. (EMBRAER)

Airplanes

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** We are superseding an existing airworthiness directive (AD) for all EMBRAER Model ERJ 170 airplanes. That AD currently requires revising the Airworthiness Limitations Section (ALS) of the Instructions for Continued Airworthiness (ICA) to incorporate new structural inspection requirements. Since we issued that AD, during full scale fatigue testing, cracks were found in certain structural components of the airplane. Analysis of these cracks resulted in the manufacturer modifying the ALS of EMBRAER 170 Maintenance Review Board Report (MRBR), to include new inspections tasks, or modifying the current tasks and their respective thresholds and intervals. This new AD requires revising the maintenance program to incorporate new or revised structural inspection requirements. We are issuing this AD to detect and correct fatigue cracking which could result in the loss of structural integrity of the airplane.

**DATES:** This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of July 6, 2010 (75 FR 30284, June 1, 2010).

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Cindy Ashforth, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone 425-227-2768; fax 425-227-1320.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on December 29, 2011 (76 FR 81894), and proposed to supersede AD 2010-11-13, Amendment 39-16318 (75 FR 30284, June 1, 2010). That NPRM

proposed to correct an unsafe condition for the specified products. The MCAI states:

During the airplane full scale fatigue test, cracks were found in some structural components of the airplane. Analysis of these cracks resulted in modifications on the Airworthiness Limitation Section (ALS) of Embraer ERJ 170 Maintenance Review Board Report (MRBR), to include new inspections tasks or modification of existing ones and its respective thresholds and intervals.

Failure to inspect these structural components, according to the new/revised tasks, thresholds and intervals, could prevent a timely detection of fatigue cracking. These cracks, if not properly addressed, could adversely affect the structural integrity of the airplane.

\* \* \* \* \*

The required action is revising the maintenance program to incorporate new structural inspection requirements. You may obtain further information by examining the MCAI in the AD docket.

#### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (76 FR 81894, December 29, 2011) or on the determination of the cost to the public.

#### **Explanation of Changes Made to this AD**

We have revised certain headers throughout this AD. We have also redesignated Note 1 of the NPRM (76 FR 81894, December 29, 2011) as paragraph (c)(2) of this AD, and paragraph (c) of the NPRM as paragraph (c)(1) of this AD. These changes have not changed the intent of this AD.

## **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting the AD with the changes described previously – and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (76 FR 81894, December 29, 2011) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (76 FR 81894, December 29, 2011).

## **Costs of Compliance**

We estimate that this AD will affect about 166 products of U.S. registry.

The actions that are required by AD 2010-11-13, Amendment 39-16318 (75 FR 30284, June 1, 2010), and retained in this AD take about 1 work-hour per product, at an average labor rate of \$85 per work hour. Based on these figures, the estimated cost of the currently required actions is \$85 per product.

We estimate that it will take about 1 work-hour per product to comply with the new basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$14,110, or \$85 per product.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in “Subtitle VII, Part A, Subpart III, Section 44701: General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM (76 FR 81894, December 29, 2011), the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2010-11-13, Amendment 39-16318 (75 FR 30284, June 1, 2010), and adding the following new AD:

**2012-07-08 Empresa Brasileira de Aeronautica S.A. (EMBRAER):** Amendment 39-17014. Docket No. FAA-2011-1325; Directorate Identifier 2010-NM-250-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD supersedes AD 2010-11-13, Amendment 39-16318 (75 FR 30284, June 1, 2010).

**(c) Applicability**

(1) This AD applies to all Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model ERJ 170-100 LR, -100 STD, -100 SE, and -100 SU airplanes; and Model ERJ 170-200 LR, -200 SU, and -200 STD airplanes; certificated in any category.

(2) This AD requires revisions to certain operator maintenance documents to include new actions (e.g., inspections). Compliance with these actions is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by these inspections, the operator may not be able to accomplish the actions described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance according to paragraph (k) of this AD. The request should include a description of changes to the required inspections that will ensure the continued damage tolerance of the affected structure. The FAA has provided guidance for this determination in Advisory Circular (AC) 25.1529-1A

[http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgAdvisoryCircular.nsf/list/AC%2025.1529-1A/\\$FILE/AC%2025.1529-1A.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/list/AC%2025.1529-1A/$FILE/AC%2025.1529-1A.pdf)).

**(d) Subject**

Air Transport Association (ATA) of America Code 53: Fuselage; 57: Wings.

**(e) Reason**

This AD was prompted by cracks found in certain structural components during full scale fatigue testing of the airplane. Analysis of these cracks resulted in manufacturer modifications of the airworthiness limitations section (ALS) of EMBRAER 170 Maintenance Review Board Report (MRBR), which include new inspections tasks, or modification of the current tasks and their respective thresholds and intervals. We are issuing this AD to detect and correct fatigue cracking which could result in the loss of structural integrity of the airplane.

**(f) Compliance**

You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

**(g) Restatement of Requirements of AD 2010-11-13, Amendment 39-16318 (75 FR 30284, June 1, 2010): Actions**

(1) Within 90 days after July 6, 2010 (the effective date of AD 2010-11-13, Amendment 39-16318 (75 FR 30284, June 1, 2010)), revise the ALS of the Instructions for Continued Airworthiness (ICA) to incorporate the inspection tasks identified in the EMBRAER temporary revisions (TRs) to Appendix A – Part 2 of the EMBRAER 170 MRBR MRB-1621 listed in table 1 of this AD.



(2) The initial compliance times for the tasks start from the applicable threshold times specified in the temporary revisions (TRs) for the corresponding tasks of the maintenance review board report or within 500 flight cycles after July 6, 2010, whichever occurs later. For certain tasks, the compliance times depend on the pre-modification and post-modification status of the actions specified in the associated service bulletin, as specified in the “Applicability” column of the applicable TRs identified in table 1 of this AD.

(3) The threshold values stated in the TRs referenced in table 1 of this AD are total flight cycles on the airplane since the date of issuance of the original Brazilian airworthiness certificate or the date of issuance of the original Brazilian export certificate of airworthiness.

**Table 1 – Inspection Tasks**

<b>TR</b>	<b>Date</b>	<b>Subject</b>	<b>Task Number</b>
TR 4-1	October 15, 2007	Ram air turbine compartment, support structure and cutout structure—internal	53-10-012-0002
			53-10-012-0003
		Nose landing gear wheel well metallic structure	53-10-021-0005
			53-10-021-0006
TR 4-3	December 6, 2007	Wing stub spar 3 side fitting—internal	57-01-012-001
		Wing upper skin panels—external	57-10-010-0002
		Fixed trailing edge lower skin panel—external	57-50-002-0002
		Fixed trailing edge rib 4A—external	57-50-005-0003
		Fixed trailing edge rib 6—internal	57-50-005-0004

TR 4-4	January 18, 2008	Wing stub main box lower—internal	57-01-002-003
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**(h) No Alternative Inspections for Paragraph (g) of This AD**

Except as required by paragraph (i) of this AD, after accomplishing the actions specified in paragraph (g) of this AD, no alternative inspections or inspection intervals may be used unless the inspection or inspection interval is approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, or the Agência Nacional de Aviação Civil (ANAC) (or its delegated agent); or unless the inspection or interval is approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k)(1) of this AD.

**(i) New Requirements of This AD: Revising the Maintenance Program**

(1) Within 60 days after the effective date of this AD: Revise the maintenance program to incorporate the new or revised tasks specified in Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7, dated November 11, 2010; and EMBRAER Temporary Revision (TR) 7-1, dated February 11, 2011, to Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7; with the initial compliance times and intervals specified in these documents.

(2) The initial compliance times for the tasks start from the date of issuance of the original Brazilian airworthiness certificate or the date of issuance of the original Brazilian export certificate of airworthiness of the applicable airplane at the applicable time

specified in the tasks, or within 600 flight cycles after revising the maintenance program, whichever occurs later. For certain tasks, the compliance times depend on the pre-modification and post-modification status of the actions specified in the associated service bulletin, as specified in the “Applicability” column of Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7, dated November 11, 2010; and EMBRAER Temporary Revision 7-1, dated February 11, 2011, to Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations of the EMBRAER 170 MRBR MRB-1621, Revision 7.

(3) For tasks identified in the documents identified in paragraph (i)(1) of this AD, doing the initial task required by this paragraph terminates the requirements of paragraph (g) of this AD for that task.

**(j) No Alternative Actions Intervals, and/or Critical Design Configuration Control Limitations (CDCCLs)**

After accomplishing the revisions required by paragraph (i) of this AD, no alternative actions (e.g., inspections), intervals, and/or CDCCLs may be used other than those specified in Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7, dated November 11, 2010; and EMBRAER Temporary Revision 7-1, dated February 11, 2011, to Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7, unless the actions, intervals, and/or CDCCLs are approved as an AMOC in accordance with the procedures specified in paragraph (k)(1) of this AD.

**(k) Other FAA AD Provisions**

The following provisions also apply to this AD:

**(1) Alternative Methods of Compliance (AMOCs):** The Manager, International Branch, ANM-116, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to ATTN: Cindy Ashforth, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone 425-227-2768; fax 425-227-1320. Information may be e-mailed to: [9-ANM-116-AMOC-REQUESTS@faa.gov](mailto:9-ANM-116-AMOC-REQUESTS@faa.gov). Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office. The AMOC approval letter must specifically reference this AD.

**(2) Airworthy Product:** For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

**(l) Related Information**

Refer to MCAI Brazilian Airworthiness Directive 2011-04-01, dated May 5, 2011; and Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7, dated November 11, 2010; and EMBRAER Temporary Revision 7-1, dated February 11, 2011, to Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7; for related information.

**(m) Material Incorporated by Reference**

(1) You must use the following service information to do the actions required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference (IBR) of the following service information under 5 U.S.C. 552(a) and 1 CFR part 51 on the date specified.

(2) The following service information was approved for IBR on [INSERT DATE 35 DAYS AFTER PUBLICATION].

(i) Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations, of the EMBRAER 170 MRBR MRB-1621, Revision 7, dated November 11, 2010. \*Only the title page of this document specifies the revision level of the document.

(ii) EMBRAER Temporary Revision 7-1, dated February 11, 2011, to Part 2 – Airworthiness Limitation Inspection (ALI) – Structures, of Appendix A, Airworthiness Limitations of the EMBRAER 170 MRBR MRB-1621, Revision 7.

(3) The following service information was approved for IBR on July 6, 2010 (75 FR 30284, June 1, 2010):

(i) EMBRAER Temporary Revision 4-1, dated October 15, 2007, to Appendix A– Part 2 of the EMBRAER 170 Maintenance Review Board Report MRB-1621.

(ii) EMBRAER Temporary Revision 4-3, dated December 6, 2007, to Appendix A – Part 2 of the EMBRAER 170 Maintenance Review Board Report MRB-1621.

(iii) EMBRAER Temporary Revision 4-4, dated January 18, 2008, to Appendix A– Part 2 of the EMBRAER 170 Maintenance Review Board Report MRB-1621.

(4) For service information identified in this AD, contact Empresa Brasileira de Aeronautica S.A. (EMBRAER), Technical Publications Section (PC 060), Av. Brigadeiro Faria Lima, 2170 - Putim - 12227-901 São Jose dos Campos - SP – BRASIL; telephone +55 12 3927-5852 or +55 12 3309-0732; fax +55 12 3927-7546; e-mail: [distrib@embraer.com.br](mailto:distrib@embraer.com.br); Internet: <http://www.flyembraer.com>.

(5) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(6) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on March 29, 2012.

Kalene C. Yanamura,  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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